

Working Paper
Business Economic Series
WP. 10-04
ISSN 1989-8843

Instituto sobre Desarrollo Empresarial
Carmen Vidal Ballester.
Universidad Carlos III de Madrid
C/ Madrid, 126
28903 Getafe Madrid (Spain)
FAX (34-91)6249607

Generating Global Brand Equity through Corporate Social Responsibility to Key Stakeholders

Anna Torres^{*}

Economics and Business Department
Universitat Pompeu Fabra

Tammo H. A. Bijmolt[†]

Marketing Department
Faculty of Economics and Business
University of Groningen

and

Josep A. Tribó[‡]

Business Department
INDEM Institute
Carlos III University

^{*} C/ Ramon Trias Fargas, 25-27, 08005 Barcelona, Spain. E-mail: anna.torres@upf.edu

[†] WSN building, room 369, PO Box 800, 9700 AV Groningen, The Netherlands. E-mail: t.h.a.bijmolt@rug.nl

[‡] C/ Madrid, 126, 28903 Getafe, Madrid, Spain. E-mail: joatribo@emp.uc3m.es

Abstract

In this paper we argue that socially responsible policies have positive short-term and long-term impact on equity of global brands. We find that corporate social responsibility towards all stakeholders, whether primary (customers, shareholders, employees and suppliers) or secondary (community), have positive effects on brand equity value, where the secondary stakeholders are even more important than primary stakeholders. In addition, policies aimed at satisfying community interests act as a mechanism to reinforce trust that gives further credibility to social responsible policies with other stakeholders. The result is a decrease in conflicts among stakeholders and greater stakeholder willingness to provide intangible resources that enhance brand equity. We provide support of our theoretical contentions using a panel data composed of 57 global brands, originating from 10 countries (USA, Japan, South Korea, France, the UK, Italy, Germany, Finland, Switzerland and the Netherlands) for the period 2002 to 2007. We use detailed information on brand equity obtained from Interbrand and on corporate social responsibility provided by the Sustainalytics Global Profile (SGB) database, as compiled by Sustainalytics.

Keywords:

Global Brands, Brand Equity, Corporate Social Responsibility, Stakeholders.

Generating Global Brand Equity through Corporate social responsibility to Key Stakeholders

I Introduction

Global brands are active in many countries and in many domains, in terms of production, logistics, purchasing, selling, consumption, etc. Management of these global brands will therefore relate to different stakeholders and the consequences will be visible worldwide. In response, management of most global brands has aligned their behavior with the norms and demands of their key stakeholders. This so-called corporate social responsibility (CSR) is expected to have an impact on firm performance in general and brand performance in particular.

The instrumental perspective of CSR states that each stakeholder provides material or immaterial resources that are more or less critical to the firm's long-term success (Hill & Jones, 1992, cf. p. 133; Maignan & Ferrell, 2004). This integrative view of stakeholders has been applied later on in relational marketing studies (Coviello, Brodie, Danaher & Johnston, 2002; Handfield & Bechtel, 2002; Blois, 1999; Doney, Barry & Abratt, 2007; Wang & Huff, 2007). A consequence of a sustained and trusting relationship with different stakeholders is the commitment of these stakeholders to the organization, such as customer loyalty (Garbarino & Johnson, 1999), stockholder capital investments, and supplier investments (Maignan & Ferrell, 2004; Sen, Bhattacharya & Korschun, 2006).

Extant literature has connected CSR to various stakeholders, to financial and market performance measures such as market share, ROI, sales growth of new product success or market value measured with Tobin's q (e.g. Greenley & Foxall, 1998; Srivastava, Shervani & Fahey, 1998; Berman, Wicks, Kotha & Jones, 1999; Orlitzky,

Schmidt & Reynes, 2003; Fry & Polonsky, 2004; Greenley, Hooley & Rudd, 2005; Luo & Bhattacharya, 2006). In addition, from a marketing perspective, CSR might have an impact on brand evaluations, brand choice, and brand recommendations (Klein & Dawar, 2004). Maignan and Ferrell (2004) established the theoretical link between stakeholder resources (organizational citizenship; reputation) and customer outputs such as loyalty, positive word of mouth and brand equity measures. In a similar vein, Gardberg and Fombrun (2006) stated that investments in corporate citizenship, like investments in R&D and advertising, can contribute to a differentiation strategy by helping companies to build brand equity. However, the effect of CSR aimed at different stakeholders on brand equity has not yet been assessed empirically.

In this paper, we contribute to the extant literature by studying the effect of CSR on brand equity, in particular for global brands. We examine the role of management of the following stakeholder relationships: customers, suppliers, employees, shareholders, and community. In line with the stream of research on long-term marketing effects (Dekimpe & Hanssens, 1999; Dekimpe, Hanssens, Nijs & Steenkamp, 2005), we address both short-term and long-term effects on global brand equity. We argue that firms that are able to behave in a responsible way with secondary stakeholders such as community gain a reputation of trustworthy organizations among primary stakeholders, such as customers, suppliers, employees, and shareholders, which enhances the effect of CSR towards these stakeholders in the short-term as well as in the long-term.

Our empirical analysis relies on a panel data analysis of 57 global brands, originating from 10 countries (the US, Japan, South Korea, France, the UK, Italy, Germany, Finland, Switzerland and the Netherlands), as included in the 2002-2007 Sustainalytics Global Profile (SGB) database. This database is compiled by Sustainalytics, a large company specialized in the analysis of socially responsible

investments. The CSR profile of each firm contains over 200 items that cover major stakeholder issues such as community involvement, customer policies, employment relations, human rights issues, corporate governance development, activities in controversial areas, and supplier relations. The data come from interviews performed by Sustainalytics specialists with a wide range of stakeholders, not only customers or managers. Additionally, we complement the database with global brand equity information obtained from Interbrand. When assessing the effects of CSR, we control for endogeneity of the CSR variables and for confounding factors such as sector, country, return on assets (ROA), firm size, and R&D expenditures (McWilliams & Siegel, 2000). Hence, we arrive at generalizable conclusions as to the effect of CSR on global brand equity because the findings are based on a longitudinal study of a broad range of firms, sectors, and countries.

II Theoretical Underpinnings and Hypotheses

Early research papers studying the instrumental use of CSR practices over a wide range of stakeholders appear in management literature (Harrison & Freeman, 1999) and are adopted later in other research areas such as marketing (Maignan & Ferrell, 2004). One theme of discussion in this literature is the effect of a firm's CSR practices on the generation of value, in general, and brand value, in particular. Some recent theoretical papers focus on the connection between CSR and a firm's performance. However, such studies do not provide a clear-cut relationship between CSR and firm financial performance (McWilliams & Siegel, 2000). Moreover, such empirical studies mainly rely on UK and USA data (McGuire, Sundgren & Schneeweis, 1988; Waddock & Graves, 1997; Greenley & Foxall, 1998; McWilliams & Siegel, 2000; Orlitzky et al., 2003; Godfrey, Merrill & Hansen, 2009). Also, some authors like

Gardberg and Fombrun (2006) criticize the use of standard measures of financial performance, such as return on assets, as they bias the short-term excessively. Such a bias is a problem given that the main benefits of CSR investments, as a set of intangible resources that creates value, are shown in the long term (Hillman & Keim, 2001). Therefore, it is not surprising that authors like Luo and Bhattacharya (2006) emphasize that more research in this line is required in order to understand the real benefits of CSR in generating value for the firm.

In order to conduct our analysis on the connection between CSR and the generation of value, we make use of the concept of brand equity, which combines aspects of financial, market, and customer-related performance in the short as well as in the long run (Keller & Lehmann, 2001). Rego, Billett and Morgan (2009) emphasize the relevance of this measure because it also incorporates aspects related to firm risk that go beyond what is explained by existing finance models (i.e., it has “risk relevance”). In particular, our intention in this paper is to conduct a fine-grained analysis of the specific stakeholders targeted in a CSR policy that have a larger effect on a firm’s global brand equity value whether in the short-term or in the long-term.

Godfrey et al. (2009) differentiate between two leagues of stakeholders: Primary stakeholders, who are essential to the operation of the business, and secondary stakeholders, who can influence the firm’s primary stakeholders. In particular, customers, employees, suppliers, and shareholders are classified as primary stakeholders, whereas broader groups like community are secondary (Greenley et al., 2005; Clarkson, 1995; Mitchell, Agle & Wood, 1997). We will make use of this distinction in order to state our hypotheses on the connection between CSR and global brand equity. In addition, we investigate whether CSR towards the community enhances the effects of CSR towards the various primary stakeholder groups.

2.1 Hypotheses on main effects of CSR on Global Brand Equity

Corporate social responsibility literature considers different criteria in order to group CSR practices. Garriga and Melé (2004) provide some clues as to how to classify CSR practices under an instrumental approach according to the objectives to be pursued. Such classification facilitates the analysis of the connection between CSR and the generation of value. These authors distinguish three broad objectives: (1) CSR practices aimed at maximizing shareholder value (related to short-term performance); (2) CSR marketing-related practices aimed at satisfying customers (positioning objectives), that have consequences in the short-term as well as in the long-term; and (3) CSR practices aimed at achieving a competitive advantage (related to long-term performance). The articulation of our conjecture will follow these three objectives of CSR.

First, dragging on agency theory (Jensen & Meckling, 1976; Jensen, 1986) and taking into consideration the economic objectives of CSR, the satisfaction of different stakeholders, whether primary or secondary, reduces conflicts among stakeholders within the organization which, in turn, enhances short-term profits. For example, the establishment of a well-developed after-sales service will satisfy customers and will reduce conflicts between customers and the firm. Also, conflict among stakeholders damages the brand image of a firm that will reinforce the negative effect in the short run. Hence, a CSR policy devoted to increasing financial performance through the reduction of conflicts among stakeholders will have a positive short-term impact on global brand value.

The second objective of CSR corresponds to positioning strategies focused on improving customer relationships by enhancing brand value, whether in the short-term

or long-term, through the social responsibility dimension towards other stakeholders such as community (Varadarajan & Menon, 1988; Garriga & Melé, 2004) or workers (Du, Bhattacharya & Sen, 2007). Hoeffler and Keller (2002) and Keller (2003) described how corporate social marketing can build customer-based brand equity through constructing brand awareness, enhancing brand image, establishing brand credibility, evoking brand feelings, creating a sense of brand community, and eliciting brand engagement. The objective is to generate perceptions of the company as legitimate, innovative and unique.

Other authors such as Hess, Rogovsky and Dunfee (2002) and Garriga and Melé (2004) also contemplate the use of CSR practices towards secondary stakeholders as a positioning strategy to achieve a competitive advantage. Firms can increase their competitive advantage with the use of philanthropic activities close to the company's mission. For example, a telecommunications company teaching computer network administration to students of a local community can gain their loyalty as potential new customers that will enhance firm's BE.

Third, connected to the previous point and relying on instrumental stakeholder theory (Freeman, 1984) as well as resources-based theory (Barney, 1991; Dierickx & Cool, 1989; Wernerfelt, 1984), we claim that by developing close relationships with primary and secondary stakeholders, these latter can provide certain intangible resources – technology, human resources, reputation, and culture – which enable the most efficient and competitive use of the firm's assets –instrumental stakeholder theory- and help it to acquire a competitive advantage over its rivals -resource-based theory- (e.g., Orlitzky et al., 2003; Sharma & Vredenburg, 1998).

Among the different stakeholders that may create a comparative advantage, those that provide firm-specific capital -whether physical or human- will be important

to achieve long-term success (Mitchell et al., 1997). These stakeholders (workers and suppliers) will have to devote some efforts to acquire firm-specific necessities (firm-specific technology or firm-specific human capital), which will provide an advantage over their competitors. For example, suppliers can give access to material resources or immaterial firm-specific knowledge that will enhance a firm's efficiency (Maignan & Ferrell, 2004). For employees, Luo and Bhattacharya (2006) point out that "firms invest in a host of employee-related initiatives such as education and safety, that engender identification and instill pride among employees, all of which influence customer satisfaction and market value" (p.16).

Similarly, the resource-dependence theory (Pfeffer & Salancik, 1978) claims that "an organization must attend to the demands of those in its environment that provide resources necessary and important for its continued survival." Each stakeholder group provides material or immaterial resources that are more or less critical to the firm's long-term success (Hill & Jones, 1992: 133). Hillman and Keim (2001) found empirical evidence supporting the idea that competitive advantage may be built with tacit assets derived from developing relationships with all primary stakeholders not only employees and suppliers.

In summary, once we take into consideration the three different objectives connecting CSR practices, and drawing from instrumental stakeholder theory, agency theory, resource-dependence theory, and relation marketing theory, we can state the following hypothesis:

H1: Global brand equity is positively affected in the short as well as in the long-term by corporate social responsibility to the primary stakeholders (customers, suppliers, employees, shareholders), as well as the secondary stakeholders (community).

2.2 Hypothesis on interaction effects

As a key element behind the instrumental use of CSR practices, authors like Maignan and Ralston (2002), Maignan and Ferrell (2004) and Du et al. (2007) point out the development of an effective *communication* of such practices towards primary stakeholders. If public opinion is skeptical about the true motivations behind the involvement by business in social affairs, firms may hesitate to publicize their social responsibility efforts for fear of public criticism. Then, firms have all the incentives in designing mechanisms to prove the fairness of their ethical stance to primary stakeholders. The strategic and opportunistic use of CSR practices aimed at these latter stakeholders will be particularly high and the need for mechanisms to show the credibility and sustainability of responsible practices will be particularly relevant. One of these mechanisms is to enhance the *visibility* of a firm's CSR (Burke & Logsdon, 1996). Such a strategy will reinforce legitimacy and the firm's reputation as an ethical entity (Lewellyn, 2002; Logsdon & Wood, 2002; Mahon, 2002). Furthermore, these authors add that the credibility of the source for the visibility of the CSR initiative is a key factor in attracting stakeholder attention. CSR practices displayed by firms towards community satisfy the visibility condition that improves a firm's credibility. According to Hess et al. (2002), these practices are triggered after shocks such as terrorist attacks or natural disasters, and, when sustained over time, they have a large impact on firm reputation to different stakeholders, which will enhance brand equity. For example, Goddard (2005) indicated that community relationship programs lead to corporate benefits such as a high percentage of consumers displaying a positive image of the company that will enhance a firm's brand-equity value. Sen et al. (2006) test empirically the transmission of companies' CSR awareness into perceptions by

stakeholders like customers, employees and shareholders of being responsible firms. They find a clear-cut, positive relationship. In particular, customers become more loyal, and eventual high-quality new capital providers (employees and suppliers) will be more willing to provide their resources to visible community-friendly firms.

The previous argument suggests that the mechanism of CSR practices involving secondary stakeholders (*i.e.* community) works to enhance a firm's credibility towards CSR policies targeted to primary stakeholders. The result is reinforcement (positive moderation) of the positive effect of a firm's CSR primary stakeholders on a firm's global brand equity value when a firm also follows responsible policies towards the community. This is our second hypothesis:

H2. Corporate social responsibility towards community positively moderates the effects of corporate social responsibility towards primary stakeholders (customers, suppliers, employees, shareholders) on global brand equity.

III Data set

Our sample is an incomplete panel data that is the result of crossing two databases. First, the aforementioned SGP databases, compiled by Sustainalytics, the world's largest company specializing in the analysis of socially responsible investments in Europe and North America, among others. The SGP database provides information on over 200 items in each firm that cover major stakeholder issues such as community involvement, customer policies, employment relations, corporate governance, supplier relations, human rights issues and activities in controversial areas. The data come from interviews by Sustainalytics specialists¹. The second database is Interbrand, which provides information about the global brand equity of the most valuable companies

¹ Visit <http://www.sustainalytics.com/> for further information on Sustainalytics Global Platform.

(<http://www.interbrand.com/>). After crossing both databases we are left with an incomplete panel data of 57 global brands from 10 different countries for the period 2002 to 2007. This sample contains 294 observations that are reduced to 194 once we include the variable of a firm's R&D intensity in the specifications.²

The distribution in terms of home country of the global brands is as follows: US 58.50%; Germany 12.2%; Japan 10.2%; France 5.1%; UK 3.74%; Switzerland 3.4%; Finland 1.7%, Korea 1.7%; Italy 1.7% and Netherlands 1.7%. In terms of the distribution among sectors (1-digit SIC), the table of frequencies is as follows: SIC=1, 1.7%; SIC=2, 27.89%; SIC=3, 45.58%; SIC=4, 7.14%; SIC=5 6.8%; SIC=7, 9.18%; SIC=8, 1.7%. Hence, there is enough variability among countries and sectors³.

3.1 Variables

The dependent variable, *Brand_Equity* (BE), is measured with the Interbrand score. Interbrand's method for valuing global brands consists of three analyses: financial, role of brand, and brand strength. The financial analysis forecasts current and future revenues attributed to the branded products, subtracting the costs of doing business (e.g., operating costs, taxes) and intangibles, such as patents and management strength, to assess the portion of earnings due to the brand. The role of the brand constitutes a measure of how the brand influences customer demand at the point of purchase. Finally, brand strength provides a benchmark of the brand's ability to secure ongoing customer demand (loyalty, repurchase, and retention) and sustain future earnings, which translates branded earnings into net present value. This assessment provides a structured way to

² The inclusion of lagged variables in the specifications to be estimated -see specification (1)-, further reduces the number of observations to 137.

³ The correspondence between 1-digit SIC codes and sectors is as follows: Agriculture, Forestry, & Fishing (1-d SIC=0); Mining & Construction (1-d SIC=1); Transportation, Communications (1-d SIC=2), Public Utilities (Electric, Gas, and Sanitary Services) (1-d SIC=3); Manufacturing (1-d SIC=4); Wholesale Trade & Retail Trade (1-d SIC=5); Finance, Insurance, & Real Estate (1-d SIC=6); Services (1-d SIC=7); Public Administration (1-d SIC=8); Non-classifiable Establishments (1-d SIC=9)

determine specific risks to the strength of the global brands. Keller and Lehmann (2001; 2006) divide existing measures of BE into three categories: customer mind-set, product market and financial market outcomes. The measure for this study integrates product market and financial market outcomes, which makes it, according to Ailawadi, Lehman and Neslin (2003), more “complete” than a single-category measure. Also, the Interbrand measure addresses criticisms about the lack of objectivity in BE measures based exclusively on customer mind-set, such as the one used by Millward Brown (Ailawadi et al., 2003). Madden, Fehle, and Fournier (2006) defend the use of Interbrand data as the most well-known and widely used brand valuation method (Haigh & Perrier, 1997).

The independent variables collect CSR practices versus a range of stakeholders: community, customers, employees, suppliers, and shareholders. Basically the information relies on the degree of disclosure of the firm’s commitment to good practices with these stakeholders, the importance and the specifics of the policy as well as the management of the policy that characterizes the relationship of the firm with these stakeholders and whether there are controversies with these stakeholders (see Table 1 for details). Also, the SGB provides an overall rating on CSR by weighting the score of the different stakeholders. These weightings are sector-specific and are developed annually. For each sector, SGB’s analysts determine the firm’s potential negative impact on each stakeholder and assign a weighting in proportion to this potential.

Control variables are *Size*, measured as the number of employees on a log scale, *ROA* measured as earnings before interest and taxes to total assets, *Leverage*, proxied by the debt-to-equity ratio, and *R&D intensity*, measured as the ratio of R&D investment to number of employees.

[Insert Table 1 about here]

3.2 Methodology

We test our hypotheses relying on a specification that explains global brand equity value in terms of different dimensions of a firm's CSR as well as control variables. We follow McWilliams and Siegel (2000) to include R&D as well as ROA as controls; Rego et al., (2009) for risk (related to a firm's leverage); and Godfrey et al. (2009) for size, which is a proxy of a firm's visibility (brand-equity value is connected to a firm's visibility). In particular, the model specification we consider is as follows:

$$\begin{aligned} \text{Brand Equity}_{it} = & \alpha_0 \text{Brand Equity}_{it-1} + \alpha_1 \text{Community}_{it} + \alpha_2 \text{Suppliers}_{it} + \alpha_3 \text{Employees}_{it} + \\ & \alpha_4 \text{Customer}_{it} + \alpha_5 \text{Corporate governance}_{it} + \alpha_6 \text{Size}_{it} + \alpha_7 \text{ROA}_{it} + \\ & \alpha_8 \text{Leverage}_{it} + \alpha_9 \text{R\&D}_{it} + \text{Controls}(\text{sector}, \text{year}, \text{country}) + \eta_i + \varepsilon_{it} \end{aligned} \quad (1)$$

where i and t index firm and year, respectively, controls (sector, year, country) are a set of dummy variables that capture temporal, sector and country effects, η_i is the possible firm-specific component of the error term, and ε_{it} is the error term.

This specification has three important caveats. First, a correlation might exist between unobservable firm-specific error term η_i and the explanatory variables (fixed-effect problem). For example, the characteristics of the manager (which are time-invariant) may have an effect on the CSR policy implemented as well as on the global brand value. In this case, the relationship between CSR policies and global brand equity would have been spurious and based on their mutual connection with managerial characteristics (η_i). We will contrast whether this fixed-effect is relevant in our specification making use of the Hausman tests. This test contrasts the null hypothesis of equal coefficients between the fixed-effect and the random-effect specification, in which there is no fixed-effect component correlated with the explanatory

variables. The results found indicate that we cannot reject the previous null hypothesis of equality in the coefficients, which indicates that we can estimate specification (1) making use of random-effect estimations, which are more efficient than fixed-effect ones.⁴

Second, the previous estimation may have reverse causality problems: brand equity value may open the possibility of obtaining resources to be spent on social issues (*slack theory* of McGuire et al., 1988; Waddock & Graves, 1997). To address this endogeneity concern related to reverse causality, we have instrumented the variables that capture the different dimensions of CSR and that are subject to potential endogeneity problems (the overall CSR score, Community, Suppliers, Employees, Customer and Corporate governance). The instrument that we use is the corresponding predicted values obtained from an estimation of each variable in terms of the corresponding lagged dependent variable as well as control variables (Size, ROA, Leverage, and R&D). The adoption of such specification follows Torres and Tribó (2010). Such instruments are not correlated, by construction, with the error term in the specification of brand equity, but they are correlated with the variables to instrument (as we included in the estimation to compute the prediction the variable to instrument lagged by one period). These are the two conditions of a good instrument. Additionally, we have conducted underidentification tests to estimate whether the instruments proposed are correlated with the endogenous variables (Bascle, 2008). All instruments pass the test indicating that they are good instruments.

Lastly, we follow Koyck (1954) and, in the specification, include the dependent variable lagged by one period ($\text{Brand Equity}_{it-1}$). The inclusion of such variable allows assessing long-term effects as well as short-term effects.⁵ Additionally this model has the

⁴ Apart from that, there is a second reason for relying on random-effect estimations, which is the persistence in the variables related to CSR policies, which make fixed-effect estimations, which are based on differences along time, particularly inefficient.

⁵ The model proposed, which relies on Koyck (1954), assumes that the short-term determinants of BE are the same as the long-term ones. This conforms to our theoretical framework.

additional benefit of addressing the possible persistence on BE.⁶ With such model specification, the coefficients $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ contrast the short-term effect on BE of CSR towards Community, Suppliers, Employees, Customer and Corporate governance respectively. For the long-term effects, the coefficients are respectively $(\frac{\alpha_1}{1-\alpha_0}, \frac{\alpha_2}{1-\alpha_0}, \frac{\alpha_3}{1-\alpha_0}, \frac{\alpha_4}{1-\alpha_0}, \frac{\alpha_5}{1-\alpha_0})$, with α_0 being the coefficient of the lagged dependent variable (see for example Leeflang, Wittink, Wedel & Naert, 2000; Chapter 6).

3.3 Results

Table 2 shows the mean, standard deviation, minimum and maximum values as well as the table of correlations of the variables that are used in specification (1). The correlation matrix shows that Brand equity is positively correlated with the different dimensions of CSR that we consider (Community, Suppliers, Employees, Customer and Corporate governance), which is in line with Hypothesis 1. Also, among control variables, larger firms, more profitable, that invest in R&D and/or are low leveraged are positively correlated with brand equity.⁷

[Insert Table 2 about here]

Table 3 shows the results of specification (1).⁸ Column 1 includes as an explanatory variable the aggregate score of CSR; while in column 2 we disaggregate this variable in its different dimensions (Community, Suppliers, Employees, Customer and Corporate governance). In both cases, we instrument the variables linked to CSR policy using

⁶ One of the criticisms of the Koyck (1954) model is the possibility that the error terms may be correlated along time. The inclusion of a firm-specific (η_i) component in the error term recognizes this possibility. However, the Hausman test that we have conducted reveals that this is not a problem in our specification. Hence, we have conducted standard random-effects estimations. We have also neglected other econometric techniques such as GMM (Arellano & Bond, 1991) because the limited number of observations in our sample would have substantially reduced the efficiency of GMM estimation.

⁷ Although there is correlation between the different dimensions of CSR that we consider, we have computed the VIF for each variable and in all cases the value was below the threshold of 10 that is considered as indicative of the existence of multicollinearity problems.

⁸ Hausman tests show that there are no significant differences among the coefficients of the random effects and those of the fixed-effects estimation. Hence, we conduct random-effects estimations as they are more efficient.

predicted values from specifications of each variable in terms of the dependent variable lagged by one period as well as control variables (Size, ROA, Leverage, and R&D), as explained in the methods section.

The results found are that a firm's CSR has a positive impact on a firm's short-term brand equity value ($\alpha = 0.385, p < 0.01$). Once, we consider the different dimensions of a firm's CSR, we have found that community ($\alpha_1 = 0.434, p < 0.01$), suppliers ($\alpha_2 = 0.032, p < 0.05$), employees ($\alpha_3 = 0.059, p < 0.01$), customers ($\alpha_4 = 0.107, p < 0.05$), as well as corporate governance ($\alpha_5 = 0.033, p < 0.05$) have a positive effect on a firm's short-term brand equity value. Also, the significant coefficient of Brand Equity_{it-1} in column 2 ($\alpha_0 = 0.818, p < 0.01$), means that all stakeholders are significant determinants of long-term brand equity value. In particular ($\frac{\alpha_1}{1-\alpha_0} = 2.385$ with $p < 0.01$) for community; ($\frac{\alpha_2}{1-\alpha_0} = 0.176$ with $p < 0.05$) for suppliers; ($\frac{\alpha_3}{1-\alpha_0} = 0.176$ with $p < 0.05$) for employees; ($\frac{\alpha_4}{1-\alpha_0} = 0.588$ with $p < 0.05$) for customer; and ($\frac{\alpha_5}{1-\alpha_0} = 0.181$ with $p < 0.05$) for corporate governance. This evidence is consistent with Hypothesis 1. It is remarkable that the most significant effect on brand equity, whether in the long-term or short-term, is that of the community.

Among control variables, larger firms, which are more visible ($\alpha_6 = 0.074$ with $p < 0.05$), more profitable ($\alpha_7 = 0.055$ with $p < 0.01$) and firms that invest in R&D ($\alpha_8 = 0.197$ with $p < 0.01$), which create intangible assets, are those that are connected with larger brand equity values.

[Insert Table 3 about here]

The test of Hypothesis 2 is done in Table 4, which departs from specification (1) and includes four alternative interaction terms that cross $D_Community \times Customer$, a

dummy that is equal to 1 (0) when *Community* is above (below) the mean value of the distribution, with the remaining stakeholders. In column 1 we include *D_Community x Customers*; in column 2 *D_Community x Corporate governance*; in column 3, *D_Community x Employees*; and in column 4 *D_Community x Suppliers*. These variables test the possible moderating effect of *Community* (when intense) in the connection from the different stakeholders to Brand equity.

Results of Table 4 are consistent with those of Table 3: as all stakeholders have positive impacts, whether in the short-term or the long-term on a firm's brand equity. Concerning the interactive terms, column 1 shows that *Community* satisfaction, when above the mean of the distribution, enhances the positive impact of *Customer* satisfaction on brand equity ($\alpha = 0.029$ with $p < 0.05$). By the same token, column 2 shows that *Community* satisfaction, when large, also plays a positive moderating role in the connection from shareholder value (corporate governance) to brand equity value ($\alpha = 0.042$ with $p < 0.05$). Such results also hold for employees ($\alpha = 0.024$ with $p < 0.05$ in column 3) and suppliers ($\alpha = 0.034$ with $p < 0.05$ in column 4). In all models, the partial effects of CSR towards the corresponding stakeholder group are also positive and significant. Hence, CSR towards each group has a positive effect on global brand equity, even if CSR to community is lower than average, where these effects are enhanced if CSR to community is high. Additionally, given that the coefficient of the dependent variable lagged by one period is still significant in all specifications with $p < 0.01$, we can state that the previous moderating results also hold for long-term analysis.

The bunch of the previous findings stresses the relevance of taking into consideration community satisfaction as a way to create brand equity. Community has a positive direct effect on brand equity value, whether in the short-term or long-term, as

well as a positive moderating effect in the positive impact of all stakeholders on the generation of short-term as well as long-term brand equity value. Finally, control variables effects are consistent with those found in Table 3.

[Insert Table 4 about here]

Summarizing the previous results, the model that we have found, which relies on the pivotal role of community satisfaction, is presented in the following figure:

[Insert Figure 1 about here]

IV Conclusions and Managerial Implications

In this paper, we have analyzed the effect of different dimensions of a firm's corporate social responsibility (CSR) policy on the creation of global brand equity (BE) value. We have provided empirical support for our hypotheses using an extensive database of 57 global brands from various industries, from 10 countries, for the period 2002 to 2007.

Our main contribution is that the key stakeholder that enhances firm global brand equity value to the greatest extent is the community. A strategy based on the satisfaction of community interests has two beneficial effects. One effect on global brand equity is direct given that satisfying the interests of the community is a way to improve a firm's credibility of being an institution with an ethical stance to all stakeholders (Godfrey et al., 2009). Such gained reputation has a direct global brand value of its own. The other effect on BE is indirect as a reinforcing mechanism (positive moderator) in the positive impact on BE of the satisfaction of all stakeholders' interests. Such reinforcing mechanism is explained in terms of the generation of trust coming from the application of visible CSR practices towards secondary stakeholders (Logsdon & Wood, 2002). A trustworthy firm will give further credibility to the long-term

commitment of the firm with all of its stakeholders, which, in the end, will have a positive effect on its short-term and long-term brand value.

A second result found in the paper is that all stakeholders, whether primary (customers, shareholders, employees and suppliers), or secondary (community) generate a positive effect on short-term as well as long-term brand equity value.

Managerial implications

Several conclusions for managers can be extracted from our paper. First, managers that wish to send a credible signal of commitment towards their stakeholders in order to enhance their firm's global brand value should pay special attention to the less salient stakeholders. Our proposal gives weight to the satisfaction of community interests. Second, those firms that expand internationally and want to fix certain standards of social responsible policies abroad are advised to acquire firms with strong community roots. Such strategy will eliminate fears of corporate expropriation by entrant firms in less developed countries. Lastly, managers that wish to sustain social responsible policies in order to create global brand value are advised to maintain a balance among different stakeholders and not focus on a single one given that brands are complex social phenomena (Mühlbacher, Hemetsberger, Thelen, Vallaster, Massimo, Füller, Pirker, Schorn & Kittinger, 2006).

Future research avenues

The main message that can be extracted from this paper is that the satisfaction of community interests is very relevant to creating and maintaining global brand value. A natural extension of the model proposed is to incorporate virtual communities into the analysis and investigate whether the reinforcing effects linked to real communities also

hold when we also consider virtual communities. A second avenue is the inclusion in the analysis of other stakeholder, such as the environment. Finally, a contingency analysis on the economic cycle would be of major interest. After the recent turmoil in the financial sector, it may be of interest to investigate whether those firms that have maintained their CSR policies towards community have been rewarded with more significant increases in their global brand value. The investigation of such issue is left for future research once a new wave of data on CSR is available.

References

- Ailawadi, K. L., D. R. Lehmann, & Neslin, S. A. (2003). Revenue premium as an outcome measure of brand equity. *Journal of Marketing*, 67(October), 1–17.
- Arellano, M. & Bond, S. (1991). Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. *Review of Economic Studies*, 58, 277–297.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 771–792.
- Bascle, G. (2008). Controlling for endogeneity with instrumental variables in strategic management. *Strategic Organization*, 6, 285–327. (doi: 10.1177/1476127008094339).
- Berman, S. L., Wicks, A. C., Kotha, S. & Jones, T. M. (1999). Does stakeholder orientation matter?. The relationship between stakeholder management models and firm financial performance. *Academy of Management Journal*, 42(5), 488–506.
- Blois, K. J. (1999). Trust in business to business relationships: an evaluation of its status. *Journal of Management Studies*, 36(2), 197–216.
- Burke, L., & Logsdon, J. M. (1996). How corporate social responsibility pays off. *Long Range Planning*, 29, 495–502.
- Clarkson, M. B. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review*, 20(1), 92–117.
- Coviello, N. E., Brodie, R. J., Danaher, P. J., & Johnston, W. J. (2002). How firms related to their markets: An empirical examination of contemporary marketing practices. *Journal of Marketing*, 66(3), 33–46.

- Dekimpe, M. G., & Hanssens, D. (1999). Sustained spending and persistent response: A new look at long-term marketing profitability. *Journal of Marketing Research*, 36(4), 397–412.
- Dekimpe, M. G., Hanssens, D. M., Nijs, V., & Steenkamp, J.E.B.M. (2005). Measuring short- and long-run promotional effectiveness on scanner data using persistence modelling. *Applied Stochastic Models in Business and Industry*, 21(4-5), 409–416.
- Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35, 1504–1511.
- Doney, P. M., Barry, J. M., & Abratt, R. (2007). Trust determinants and outcomes in global B2B services. *European Journal of Marketing*, 41(9/10), 1096–1116.
- Du, S., Bhattacharya, C. B., & Sankar, S. (2007). Reaping relational rewards from corporate social responsibility: The role of competitive positioning. *International Journal of Research in Marketing*, 24, 224–241.
- Freeman R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman.
- Fry, M. L., & Polonsky, M. J. (2004). Examining the unintended consequences of marketing. *Journal of Business Research*, 57, 1303–1306.
- Garbarino, E., & Johnson, M.S. (1999). The different roles of satisfaction, trust, and commitment in customer relationships. *Journal of Marketing*, 63(April), 70–87.
- Gardberg, N. A., & Fombrun, Ch. J. (2006). Corporate citizenship: Creating intangible assets across institutional environments. *Academy of Management Review*, 31(2), 329–346.
- Garriga, E., & Melé, D. (2004). Corporate Social Responsibility Theories: Mapping the Territory. *Journal of Business Ethics*, 53, 51–71.
- Goddard, T. (2005). Corporate Citizenship and Community Relations: Contributing to the Challenges of Aid Discourse. *Business and Society Review*, 110(3), 269–296.

- Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: an empirical test of the risk management hypothesis. *Strategic Management Journal*, 30(4), 425–445.
- Greenley, G. E., & Foxall, G. R. (1998). External moderation of associations among stakeholder orientation and company performance. *International Journal of Research in Marketing*, 15, 51–69.
- Greenley G. E., Hooley, G. J., & Rudd, J. M. (2005). Market orientation in a multiple stakeholder orientation context: implications for marketing capabilities and assets. *Journal of Business Research*, 58, 1483–1494.
- Haigh, D., & Perrier, R. (1997). Valuation of trademarks and brand names. In: Raymond Perrier (Eds.), *Brand Valuation* (pp. 19–24). London: Premier Books, 3rd edition.
- Handfield, R. B., & Bechtel, Ch. (2002). The role of trust and relationship structure in improving supply chain responsiveness. *Industrial Marketing Management*, 31(4), 367–382.
- Harrison, J. S., & Freeman, R. E. (1999). Stakeholders, social responsibility, and performance: Empirical evidence and theoretical perspectives. *Academy of Management Journal*, 42(5), 479–485.
- Hess, D., Rogovsky, N. & Dunfee, T. W. (2002). The next wave of corporate community involvement: Corporate social initiatives. *California Management Review*, 44(2), 110–125.
- Hill, Ch. W. L., & Jones, T. M. (1992). Stakeholder-agency theory. *Journal of Management Studies*, 29(2), 131–154.
- Hillman, A. J., & Keim, G. D. (2001). Shareholder Value, Stakeholder Management, and Social Issues: What's the Bottom Line? *Strategic Management Journal*, 22, 125–139.

- Hoeffler, S., & Keller, K. L. (2002). Building brand equity through corporate societal marketing. *Journal of Public Policy and Marketing*, 21(1), 78–89.
- Jensen, M. (1986). Agency costs of free cash flow, corporate finance, and ownership structure. *American Economic Review*, 76, 323–329.
- Jensen, M. & Meckling, W. (1976). Theory of Firm: Managerial Behavior, Agency Cost and Capital Structure. *Journal of Financial Economics*, 3, 305–360.
- Keller, K. L. (2003). Brand Synthesis: The Multidimensionality of Brand Knowledge. *Journal of Consumer Research*, 29(March), 595–600.
- Keller, K. L., & Lehmann, D. R. (2001). The brand value chain: Linking strategic and financial performance. *Working paper*, Tuck School of Business, Dartmouth College.
- Keller, K. L., & Lehmann, D. R. (2006). Brands and branding: Research findings and future priorities. *Marketing Science*, 25(6), 740–759.
- Klein, J., & Dawar, N. (2004). Corporate social responsibility and consumers' attributions and brand evaluations in a product-harm crisis. *International Journal of Research in Marketing*, 21, 203–217.
- Koyck, L. M. (1954). *Distributed lags and investment analysis*. Amsterdam: North-Holland.
- Leeflang, P.S.H., D.R. Wittink, M. Wedel. & Naert, P. A. (2000). *Building models for marketing decisions*. Boston: Kluwer.
- Lewellyn, P. G. (2002). Corporate reputation: Focusing the zeitgeist. *Business & Society*, 41, 446–455.
- Logsdon, J. M., & Wood, D. J. (2002). Reputation as an emerging construct in the business and society field: An introduction. *Business & Society*, 41, 365–370.
- Luo, X., & Bhattacharya, C. B. (2006). Corporate social responsibility, customer satisfaction, and market value. *Journal of Marketing*, 70(October), 1–18.

- Madden, T. J., Fehle, F., & Fournier, S. (2006). Brands matter: An empirical demonstration of the creation of shareholder value through branding. *Journal of the Academy of Marketing Science*, 34(2), 224–235.
- Mahon, J. F. (2002). Corporate reputation: A research agenda using strategy and stakeholder literature. *Business & Society*, 41, 415–445.
- Maignan, I., & Ferrell, O. C. (2004). Corporate social responsibility and marketing: An integrative framework. *Journal of the Academy of Marketing Science*, 32(1), 3–19.
- Maignan, I., Ralston, D. A. (2002). Corporate Social Responsibility in Europe and the U.S.: Insights from Businesses' Self-presentations. *Journal of International Business Studies*, 33(3), 497–514.
- McGuire, J. B., Sundgren, A., & Schneeweis, T. (1988). Corporate social responsibility and firm financial performance. *Academy of Management Journal*, 31(4), 854–872.
- McWilliams, A., & Siegel, D. (2000). Corporate Social Responsibility and Financial Performance: Correlation or Misspecification?. *Strategic Management Journal*, 21, 603–609.
- Mitchell, R. K., Agle, B.R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of whom and what really counts. *Academy of Management Review*, 22(4), 853–886.
- Mühlbacher, H., Hemetsberger, A., Thelen, A., Vallaster, C., Massimo, R., Füller, J., Pirker, C., Schorn, R., & Kittinger, C. (2006). Brands as complex social phenomena. Paper presented at the conference *Thought Leaders International Conference on Brand Management*, Birmingham.
- Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, 24(3), 403–441.

- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper & Row.
- Rego, L. L., Billett, M. T., & Morgan, N. A. (2009). Consumer-based brand equity and firm risk. *Journal of Marketing*, 73(6), 47–60.
- Sen, S., Bhattacharya, C. B., & Korschun, D. (2006). The role of corporate social responsibility in strengthening multiple stakeholder relationships: A field experiment. *Journal of the Academy of Marketing Science*, 34(2), 158–166.
- Sharma, S., & Vredenburg, H. (1998). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. *Strategic Management Journal*, 19(8), 729–753.
- Srivastava, R. K., Shervani, T. A., & Fahey, L. (1998). Market-based assets and shareholder value: A framework for analysis. *Journal of Marketing*, 62, 2–18.
- Torres, A., & Tribó, J. A. (2010). Do satisfied customers always lead to greater brand equity?. *Journal of Business Research* (forthcoming).
- Varadarajan, P. R., & Menon, A. (1988). Cause-related marketing: A coalignment of marketing strategy and corporate philanthropy. *Journal of Marketing*, 52(July), 58–74.
- Waddock, S. A., & Graves, S. B. (1997). The corporate social performance-financial performance link. *Strategic Management Journal*, 18(4), 303–319.
- Wang, S., & Huff, L. C. (2007). Explaining buyers' responses to sellers' violation of trust. *European Journal of Marketing*, 41(9/10), 1033–1052.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5, 171–180.

Table 1. Definition of the variables

Dependent Variables	
Brand_Equity	The score that Interbrand provides for such issue. Interbrand's method of valuing brands consists of three analyses: financial, role of brand, and brand strength. The financial analysis forecasts current and future revenues attributed to the branded products, subtracting the costs of doing business (e.g., operating costs, taxes) and intangibles, such as patents and management strength, to assess the portion of earnings due to the brand. The role of the brand constitutes a measure of how the brand influences customer demand at the point of purchase. Finally, brand strength provides a benchmark of the brand's ability to secure ongoing customer demand (loyalty, repurchase, and retention) and sustain future earnings, which translates branded earnings into net present value. This assessment provides a structured means to determine specific risks to the strength of the brands. We take this variable in logs in order to reduce skewness.
Main explanatory Variables:	
Customers	<i>Customers</i> is the weighted average of the following items: (1) whether a separate report features customer issues; (2) the appearance of information concerning customer issues on the firm's Web site; (3) whether the annual report contains information concerning customer issues; (4) a formal policy statement noting customer issues; (5) the degree of detail of the management system, including the disclosure of quantitative data and the existence of a formal policy with regard to product quality; (6) whether a formal policy pertains to marketing/advertising practices; (7) the existence of a formal policy statement on product safety; (8) the level of board responsibility for customer satisfaction; (9) facilities with quality certification; and (10) marketing practices designed to satisfy customers.
Corporate Governance	<i>Corporate Governance</i> is the weighted average of the following items: (1) Directors' biographies; (2) Directors' remuneration/compensation; (3) CEO's remuneration/compensation; (4) Number and nature of board committees; (5) Primary stock ownership and voting rights; (6) The company has corporate governance principles; (7) Directors' term of office; (8) Board performance evaluation; (9) Board effectiveness; (10) Number of NEDs on the Board; (11) Number of independent NEDs on the Board; (12) Separate position for chairman of board and CEO; (13) Existence of audit committee; (14) Audit committee composition; (15) Remuneration committee composition; (16) Existence of nomination committee; (17) Nomination committee composition; (18) "One share, one vote" principle; (19) 3% non-audit fees of audit fees; (20) Absence of anti-takeover devices; (21) Remuneration; (22) Shareholders' rights; (23) Governance structures or practices.

Community	<p><i>Community satisfaction</i> is the weighted average of the following items: (1) Separate foundation or community report; (2) Community involvement information on websites; (3) Community information in annual report; (4) Statement on community involvement; (5) Formal human rights policy in sensitive countries; (6) Description of community programs/organization; (7) Data on allocation of resources; (8) Formal policy on community involvement; (9) Human rights policy in sensitive countries; (10) Management responsibility for community affairs; (11) Community affairs department; (12) Formal volunteer programs; (13) Programs for consultation with communities; (14) Guidelines for operations in sensitive countries; (15) Total giving; (16) Percent donations; (17) Primary areas of support; (18) Local communities; (19) Tax issues; (20) Activities in sensitive countries.</p>
Employees	<p><i>Employee satisfaction</i> is the weighted average of the following items: (1) Separate employee report; (2) Employee information on website; (3) Employee information in annual report; (4) Policies/Principles regarding employees; (5) Description of employee benefits programs; (6) Disclosure of quantitative data; (7) Formal policy statement on health and safety; (8) Formal policy on diversity/employment equity; (9) Formal policy on freedom of association; (10) Formal policy statement on child/forced labor; (11) Formal policy statement on working hours; (12) Formal policy statement on wages; (13) Board responsibility for human resources issues; (14) Specific health and safety targets; (15) Diversity/Equal opportunity programs; (16) Work/Life programs; (17) Training programs; (18) Participative management programs; (19) Systems for collective labor negotiations; (20) Cash profit sharing programs; (21) Ownership programs; (22) Regular employee satisfaction surveys; (23) Specific employment related indicators; (24) Total workplace time lost; (25) Health and safety fines; (26) Employee satisfaction; (27) Supervisory Board (NEDs); (28) Management (EDs); (29) Quality of industrial relations; (30) Subsidiaries with social certification; (31) Major recent lay-offs; (32) Health and safety incidents; (33) Freedom of association; (34) Discrimination; (35) Child/Forced Labor; (36) Restructuring; (37) Employment conditions</p>
Suppliers	<p><i>Suppliers satisfaction</i> is the weighted average of the following items: (1) Separate report on contractors and suppliers; (2) Contractor's information on website; (3) Contractor's information in annual report; (4) Code of conduct for contractors; (5) Description of organization and programs; (6) Disclosure of quantitative data on contractors; (7) Formal statements on health and safety; (8) Formal statements on working hours or wages; (9) Formal statements on freedom of association; (10) Formal statements on child/forced labor;</p>

	(11) Formal statements on acceptable living conditions; (12) Formal statements on non-discrimination; (13) Statements on disciplinary practices; (14) Board responsibility for contractors human rights; (15) Contractors' awareness programs; (16) Monitoring systems to ensure compliance; (17) Contractors' audits results; (18) Contractors with social certification; (19) Health and safety among contractors; (20) Freedom of association among contractors; (21) Child/Forced labor among contractors; (22) Discrimination among contractors; (23) Employment conditions among contractors.
Control variables:	
Size	Number of employees on a log scale
ROA	Earnings before interest and taxes to total assets
Leverage	The debt-to-equity ratio
R&D	The ratio of R&D investments to the number of employees.

Table 2. Descriptive Statistics

		Obs	Mean	DS	Min	Max	1	2	3	4	5	6	7	8	
1	Brand equity	294	9.15	0.85	7.79	11.16	1								
2	Community	294	60.94	16.90	12.00	98.19	0.19	1							
3	Suppliers	294	45.29	22.07	0.00	95.44	0.19	0.33	1						
4	Employees	294	55.14	13.23	14.12	86.13	0.06	0.37	0.42	1					
5	Customers	294	54.68	17.13	0.00	100.00	0.13	0.23	0.23	0.27	1				
6	Corporate Governance	294	70.14	14.61	6.67	100.00	0.06	0.19	0.09	0.09	0.14	1			
7	Size	294	16.45	3.87	10.10	26.35	0.18	-0.11	0.03	-0.01	-0.01	-0.49	1		
8	ROA	294	11.54	8.25	-9.95	31.82	0.10	0.17	0.01	-0.20	0.01	0.13	-0.15	1	
9	Leverage	294	2.89	6.55	0.13	81.39	-0.22	-0.15	-0.09	-0.07	-0.05	-0.01	-0.08	-0.29	1
10	R&D	194	0.06	0.03	0.00	0.16	0.04	-0.24	-0.13	-0.23	-0.15	-0.49	0.67	-0.09	-0.10

Table 3: Determinants of brand equity^a

Table 3 shows the results of conducting estimations of firm's brand-equity in terms of that variable lagged by one period, a firm's CSR as well as its different components and controls. The variables are defined in Table 1. All variables are standardized.

VARIABLES	(1) Brand Equity (t) Random-effect	(2) Brand Equity (t) Random-effect
Brand Equity (t-1)	0.763*** (0.040)	0.818*** (0.045)
Score	0.385*** (0.071)	
Community		0.434*** (0.096)
Suppliers		0.032** (0.014)
Employees		0.059*** (0.017)
Customer		0.107** (0.060)
Corporate governance		0.033** (0.016)
Size	0.054*** (0.018)	0.074** (0.042)
ROA	0.038* (0.020)	0.055*** (0.025)
Leverage	-0.004 (0.003)	-0.008 (0.046)
R&D	0.216*** (0.063)	0.197*** (0.030)
Intercept	1.716*** (0.278)	1.900*** (0.456)
Observations	137	137
Hausman Test	12.40 (0.191)	22.00 (0.157)
R ² (%)	94.33%	95.73%

^a Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Determinants of brand equity (Interaction terms)^a

Table 4 shows the results of conducting estimations of firm's brand-equity, that variable lagged by one period, the different stakeholders' satisfaction as well as their interaction terms and control variables. D_Community is a dummy that is equal to 1 (0) when Community is above (below) the mean value of the distribution. The remaining variables are defined in Table 1. All variables are standardized.

VARIABLES	(1) Brand Equity (t) Random-effect	(2) Brand Equity (t) Random-effect	(3) Brand Equity (t) Random-effect	(4) Brand Equity (t) Random-effect
Brand Equity (t-1)	0.796*** (0.051)	0.794*** (0.052)	0.797*** (0.051)	0.809*** (0.048)
Community	0.466*** (0.115)	0.433*** (0.110)	0.484*** (0.110)	0.416*** (0.110)
Suppliers	0.028* (0.015)	0.024* (0.016)	0.027* (0.015)	0.019* (0.016)
Employees	0.058*** (0.018)	0.059*** (0.019)	0.054*** (0.018)	0.062*** (0.018)
Customer	0.124* (0.066)	0.114** (0.067)	0.133** (0.066)	0.114** (0.065)
Corporate governance	0.028** (0.014)	0.029** (0.016)	0.029** (0.015)	0.030** (0.015)
D_Community x Customer	0.029** (0.015)			
D_Community x Corp. governance		0.042** (0.019)		
D_Community x Employees			0.024** (0.013)	
D_Community x Suppliers				0.034** (0.018)
Size	0.089* (0.047)	0.075* (0.044)	0.088* (0.047)	0.081* (0.044)
ROA	0.064** (0.027)	0.071** (0.029)	0.064** (0.025)	0.068*** (0.025)
Leverage	-0.014 (0.048)	-0.028 (0.045)	-0.019 (0.048)	-0.020 (0.047)
R&D	0.118*** (0.032)	0.104*** (0.039)	0.121*** (0.033)	0.104*** (0.031)
Intercept	1.921*** (0.526)	2.212*** (0.562)	2.097*** (0.530)	2.030*** (0.498)
Observations	137	137	137	137
Hausman Test	0.05 (1.00)	0.83 (1.000)	0.68 (1.000)	0.10 (1.000)
R ² (%)	96.61%	96.14%	96.58%	96.78%

^a Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Figure 1: The model

